CUSTOMER: .....

REFERENCE: .....

GETINGE

GETINGE GROUP

9027 CART & UTENSIL WASHER/DISINFECTOR

PRODUCT SPECIFICATION

PRODUCT

The Getinge 9027 Washer/Disinfector is a fully automatic, large capacity, floor loading hydro-spray mechanical washer.

INTENDED USE

The Getinge 9027 Health Care Washer Disinfectors for washing, intermediate level of disinfection and drying of hospital carts, containers and utensils (stainless steel wash basins, bowls and similar items).

The goods to be washed must be loaded on the correct loading equipment recommended by Getinge Disinfection AB to comply with ISO 15883.The User is responsible that Installation Qualification, Operating Qualification and Performance Qualification are performed according to local demands or En ISO 15883 before commercial operation of the washer disinfector.

KEY FEATURES

- The Getinge 9027 features the PACS 3500 microprocessor control system with OP 10-30 operator panels ready cycles to choose from.
- Units can be recessed in a shallow 150mm (6-inch) pit for level floor loading, or mounted directly on the floor with ramp for loading and unloading.
- The 9027 is standard with an exclusive full-view, power sliding glass door for loading and unloading operations.
- All models feature vertically mounted, lateral-sweeping, jet-spray manifold system mounted along both walls of the chamber, level-walkable flooring, select able power floor tilt, and integrated air drying.
- Circulation and heating system is packaged on the service side of the machine and includes chemical dosing pumps, enclosed steam heat exchanger, main wash pump, drain pump and drain tank with cool-down possibilities as an option.
- Optional wash solution saving tank and final-rinse retention system reduce consumptions and speed transition to the next cycle.

QUALITY STATEMENT

Confidence in the Getinge Groupe is the most important quality criterion. It must be the hallmark of all our external and internal commitments, activities and products. Products and service supplied by Getinge must conform to the agreed terms and expectations to ensure recommendations for further business. The achievement of these quality goals is the basis for continued completive and successful enterprise.

STANDARDS AND CODES

The Getinge 9027 Washer Disinfectors complies with the following requirements and standards.

- MDD 93/42/EEC (Medical Device Directive) Certificate 41314824 issued by Intertek Semko AB, Code 0413
- ETL/SEMKO (Testing Laboratories Inc.) Standard: UL 61010-1,CSA C22.2#61010.2-040 CAN/CSA-C22.2 No. 61010-2-040, IEC 61010-2-040, EN61010-2-040
- EMC (Electromagnetic Compatibility) Standard: EMC Directive 89/336/EEC, Product standard EN 61326-1, Product Family Standrard EN IEC 60601-1-2:2004 (Voluntary applied)
- EN ISO 15883 in applicable parts

CUSTOMER: .....

REFERENCE: .....

ORDERING INFORMATION

PRODUCT SELECTIONS FOR ORDERING

For ordering tick in your selections.

❑ Standard choice ❍ Optional choice

MOUNTING

❑ Floor mounted
❑ Pit mounted

LOCATION OF CONTROLS AND SERVICE ACCESS

The door slides to the side towards the service side.

❑ Right hand controls and service
❑ Left hand controls and service

SERVICE ENCLOSURE PANELS

❑ No panels
❍ Side access service enclosure
❍ Front access service door with panels on opposite side

SUPPLY VOLTAGE STEAM HEATED

❑ 600 V, 3+PE, 60 Hz with transformer
❑ 480 V, 3+PE, 60 Hz with transformer
❑ 415 V, 3N+PE, 50 Hz with transformer
❑ 400 V, 3N+PE, 50 Hz
❑ 380 V, 3+PE, 60 Hz with transformer
❑ 380 V, 3+PE, 50 Hz with transformer
❑ 240 V, 3+PE, 60 Hz with transformer
❑ 230 V, 3+PE, 50 Hz with transformer
❑ 208 V, 3+PE, 60 Hz with transformer
❑ 200 V, 3+PE, 60 Hz with transformer
❑ 200 V, 3+PE, 50 Hz with transformer

INCLINED DOOR TRACK

As standard, the doors are moving horisontally. If the unit is pit mounted, in a pit that is not wide enough, the door must move upwards to allow it to pass edge of the pit.
Pits with a width of 1900 mm to 2400 mm need to have the inclined door track option.

❑ No inclined door
❍ Inclined door

COLD & WARM WATER VALVES

Two valves are standard for CW+HW

❑ No Purified water valve
❍ Purified water valve

DOSING PUMPS

As standard two dosing pumps for process chemicals are supplied.
Flow control can be orderd as an option

❑ No flow control
❍ Flow control

DRAIN COOLING

Monitored drain cool down to max 60°C.

❑ No drain cool down
❍ Monitored drain cool down

SAVING TANK

As standard the 9027 is delivered with one drain tank.
As option, one saving tank can be supplied.

❑ No saving tank
❍ One saving tank

PROCESS RECORD

As standard RS232+RS485 for connection of T-DOC and/ or Printer are supplied.

❑ No printer *
❍ External A4 printer including cable, type Epson LX300

* Documentation of process is required to fulfill EN ISO 15883

FLOOR TILT

As an option the floor can be tilted for better water drip off and faster drying.

❑ No trolley tilt in drying phase
❍ Trolley tilt in drying phase

LANGUAGE

Operator displays and manuals are available in a selection of languages. Other information and manuals are in English.

Documentation are available for all EU languages except for Greek.

Please state wanted language below

ACCESSORIES

The Getinge 9027 is very flexible when it comes to the variety of items to be cleaned and disinfected. There is a universal wash cart which processes containers, utensils and similar items.

❍ Universal 52” wash cart (Two carts can be processed simultaneously)

DOCUMENTATION

Machine delivery includes 1 set of the following documentation:

- Installation Manual
- Field inspection check list
- Rough-in-drawings
- User manual
- Service Manual
- Spare parts list
- P & I diagram
- Cubicle layout
- Circuit diagram
- List of components internal apparatus
- External components
- Cable connection table

DISCLAMIER

Do not use this product specification for installation of equipment. Subject to change without notice.

STANDARD DESIGN FEATURES

Laminated Safety Glass Doors – Four laminated layers of safety tempered glass provide a full-size viewing door to the loading and unloading side of the chamber. Laminated glass provides excellent sound and heat insulation, as well as an extra measure of operator safety.

Double Door Pass Through – Doors at each end of the chamber promote a convenient and aseptic flow of goods from a soiled work area to a clean area. Door interlocks assure integrity of barrier wall by allowing only one door to be open at any given time.

Level Chamber Floor – Chamber is fitted with removable sections of floor grates that provide drainage to the sump as well as a level walking and rolling surface to facilitate loading and unloading of materials.

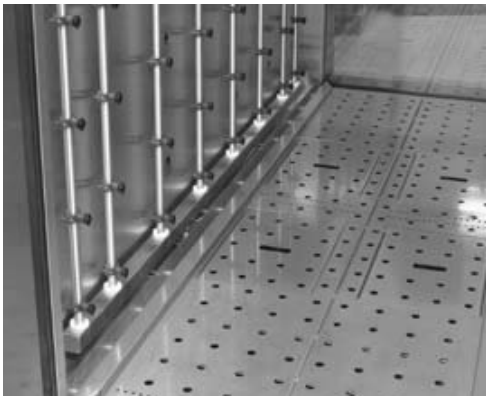
Gross Debris Filter – A debris filter screen is located beneath floor panels to filter water entering the sump. Openings in the floor are easily removed for cleaning of the filter.

Top Mounted Filling Valves – Two air-operated valves are mounted on top of the chamber for connection to building hot and cold water supply. An optional third valve for Purified water can be connected to the cold water pipe.

Shallow Sump – Low profile of the sump tank holds an economical approx. 135 liters (~36 gallons) of water. 150mm (6-inch) high base frame can be floor mounted with ramps or recessed in a shallow 150 mm deep pit. Last cycle can be programmed to save the final rinse water in the sump for reuse in the first phase of the next cycle. Saving the final rinse will reduce cycle consumption by max. 90 liters (24 gallons).

External Heat Exchanger – Solutions from the wash pump are forced through a powerful steam to water heat exchanger to rapidly elevate and maintain process water temperature at specified set point. Water temperature velocity is 6°-14°C/minute (43°-57°F/minute) for the steam heated version depending on temperature and steam conditions. Meanwhile, the cool fresh air creates condensation in the moist hot air leaving the heat exchanger. The condensation droplets are piped to the water trap and then to drain.

Oscillating Jet-Spray Manifold – The spraying manifold is comprised of vertical tubes spaced evenly along both sides of the chamber with 8 tubes per side from floor to ceiling. When the wash or rinse treatment starts, the two motors will oscillate all manifold tubes both sides in a back-and-forth-sweeping action, assuring constant impingement on all surfaces of the load. Jet nozzles are easily removed with a quarter turn, for cleaning or replacement. Vertical manifold tubes are easily removed and interchanged or replaced.



Oscillating Jet-Spray Manifold

Automatic Chemical Dispensing – Two peristaltic chemical dosing pumps are provided standard for time/volume based control of detergent dosage. The dosing pumps have a capacity of 600ml/min.

Drain Pump – The 9027 is equipped standard with a drain pump. Wash and rinse solutions are pumped to an effluent tank or the optional savings tank for handling prior to gravity draining into the building waste system.

Effluent Tank – Hot process solutions from the drain pump are sent to the effluent tank for treatment, prior to gravity draining into the building waste system.

Drain Discharge Tempering (option) – As hot solutions enter the effluent tank, cold water is automatically injected to reduce the temperature to 60°C (140°F) or less before the discharge enters the building waste system.

Drying Heat Exchanger – Warm air leaving the chamber passes through the heat exchanger in vanes touching the incoming fresh air. Heat energy is transferred to the colder incoming air, increasing its temperature before it reaches the chamber.

CONTROL SYSTEM FEATURES

Pacs 3500 Microcomputer Controls

The PACS 3500 modular PLC control system is dedicated to the control, operation and maintenance of Getinge sterilizers and washer/disinfectors, featuring:

- 8 MB RAM CPU processor with battery backup
- Digital inputs and outputs for machine control
- Analog measuring inputs
- RS-232 COM port for serial communication
- RS-485 COM port for T-DOC connection
- 10-30 cycle program memory

The PACS 3500 controls all system functions, monitors system operations, both visually and audibly alerts the operator of cycle malfunction and on demand, provides visual indication of the chamber temperature.

OP30 Operator Control Panel

The machine is controlled and operated from the OP30 control panel, convenient height above the floor. The OP30 LCD operator interface is a 5.7-inch color screen with 320 x 240 pixels. By default, the cycle process sequence is displayed as DETAILS or list of cycle parameters. In the SETUP menu, the operator can choose to display the cycle progression as a PLOT GRAPH or BAR GRAPH.

The following indicators and function keys are located to the right of the screen:

- Door Closed
- Door Closed and Locked
- Process Running
- Process Complete
- Alarms
- Close the Door
- Open the Door
- Reset Alarms
- Start Cycle

Operator Panel Non Control Side

Double door pass-through units are provided with a small OP10 panel for operations at the unload door.
The panel has the following indicators and function keys:

- Cycle status indicators
- Door Open Button
- Close Door Buttons

OP30 Operator Control Panel

MATERIALS

Wash chamber is constructed of three modules, a central core and two extension gables, whitch are fitted to the core. The interior walls are AISI 316L stainless steel, with a Ra 0,45-0,7 finish for longlasting durability. Exterior panels are AISI 304 stainless steel with a Ra 0,45-0,7 finish.

The door is constructed of four sheets of temper-hardened glass, laminated with an air gap in the center and wrapped in a AISI 304 stainless steel edge. Door fascia and barrier wall panels are polished AISI 304. Dryer and ducting are all AISI 304 stainless steel. Solution retention/reuse tanks are AISI 316L stainless steel. Process piping, valves, in-line heat exchanger, steam coils, manifold tubes, sump base, removable filter screens and chamber floor are made of AISI 316 stainless steel. AISI 316L stainless steel sanitary tri-clamp fittings are used for easy removal of key process components. Gaskets and hoses are EPDM, PTFE or Silicone. Interior of double-pan chamber ceiling and wall panels are insulated with 40 mm (1-1/2 inch) thick, rigid foam sheets to reduce heat loss.

CYCLE DESCRIPTION

If there is any doubt regarding the processing of a specific material or product in the 9027, contact the manufacturer of the product for recommended mechanical cleaning techniques & processes.

Prerinse - Water fills the sump or water remaining in the sump from the final rinse of the previous cycle is recirculated through the jet spray system under full pump pressure.

Wash – Hot or cold water fills the sump. A dosing pump automatically adds a programmed amount of chemical cleaning agent. Once full, the circulation pump will start and pressurized cleaning solution will be forced into the spray manifold nozzles and onto the load.

Once set point temperature has been achieved, the controller will time the wash for example 2 minutes (adjustable from 1-15 minutes) and then terminate the wash phase.

Rinse - Fresh water fills the sump. Once full, the circulation pump is energized and rinse water is forced into the spray manifold nozzles and onto the load.

Final Rinse / Disinfection – Rinsing continues until the solution reaches factory set point of 90°C (194°F). Once set point temperature has been achieved, the controller will time the thermal rinse for a factory set contact time of 1 minute.

Drying – Drying starts upon completion of the final rinse. Fan forces clean air over the heat exchange at high velocity and the drying air now enters the chamber.

Air is forced through 20 ports in the wall on one side of the chamber, rapidly reaching all surfaces of the load.

Air and turbulence combine to dry loads faster and shorten process times.

STANDARD SAFETY FEATURES

Full-View Glass Door – Glass door at entry and exit of chamber allow all personnel to observe the inside of the chamber.

Illuminated Chamber – Wash chamber is equipped with two (2) halogen lamps mounted through the ceiling to illuminate the chamber for safe operations.

Emergency Stop Cable – Washer chamber is equipped with a visible emergency stop cable that extends the full length of the chamber. When the cable is pulled, power to the pumps and motors is immediately interrupted.

Manually Open Door – If power is interrupted, the air cylinders that seal the sliding glass door return to a normally open position. The door will be free and can be slid open manually.

Emergency Stop with Key Lock – Operator interface of both doors is equipped with an emergency stop button with a key to prevent accidental release of the interrupt function. Emergency stop is locked and the key removed when any maintenance is to be performed.

Door Obstruction – If the moving door contacts an obstruction while the operator is closing the door, the door will reverse and go back to open position. The door can be closed again when the obstruction is removed.

Door Safety Switch – Microswitches mounted at the load and unload door prevent a cycle from being started until both doors are fully closed and sealed. If the operator fails to seal the door, the cycle cannot be started.

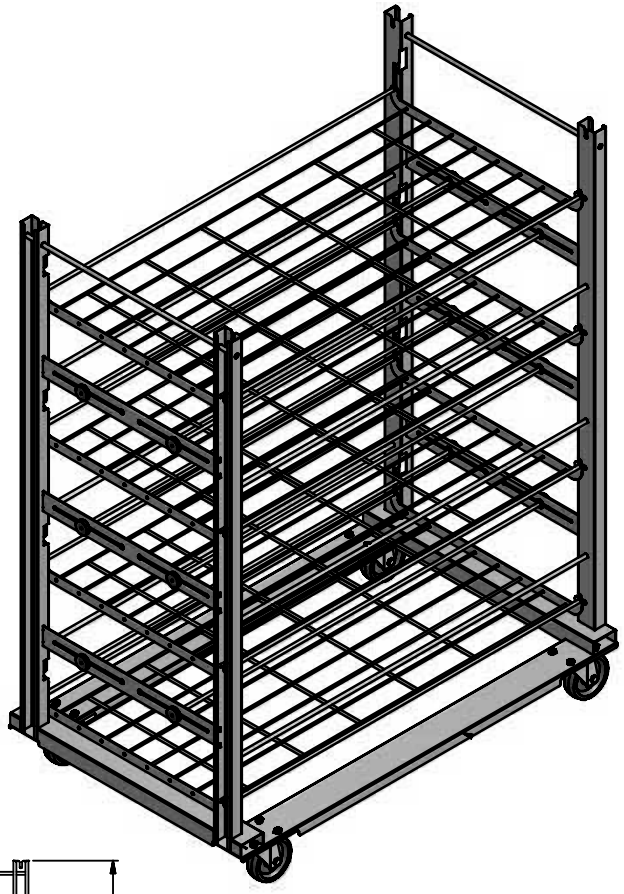
Door Interlock Switches – The PACS controls will permit only one door to be unsealed and open at any given time during normal operations. Alternating door operation helps maintain integrity of the barrier wall.

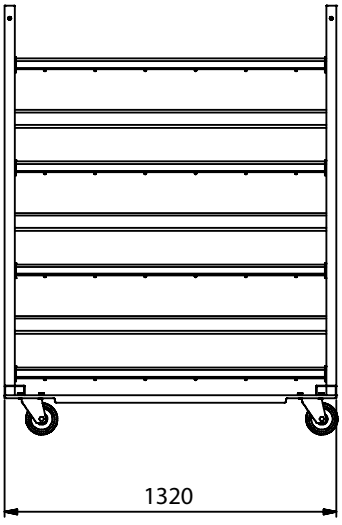
Low Chemical Alarm – Low level sensor in the suction tube assembly will automatically send a low chemical alarm to the message screen to alert operators. Chemical container must be replaced or re-filled before controller will allow subsequent cycles to be run.

ACCESSORIES

Floor Mounted Ramps – Specify and order ramps for ease of loading floor mounted machines. Factory ramps are 150 mm high x 915 mm wide x 915 mm or 1219 mm long, (6 inches high x 36” wide x either 36” or 48” long).

Wash Cart - The Getinge 9027 is very flexible when it comes to the variety of items to be cleaned and disinfected. There is a universal wash cart that can handle containers, utensils and similar items.

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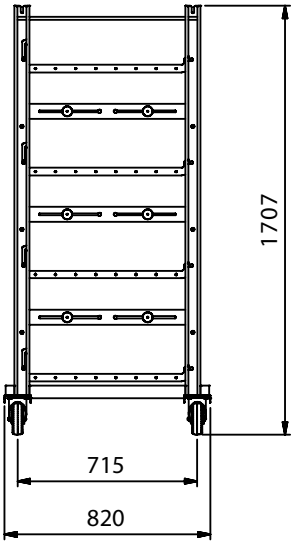
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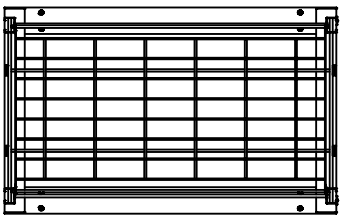
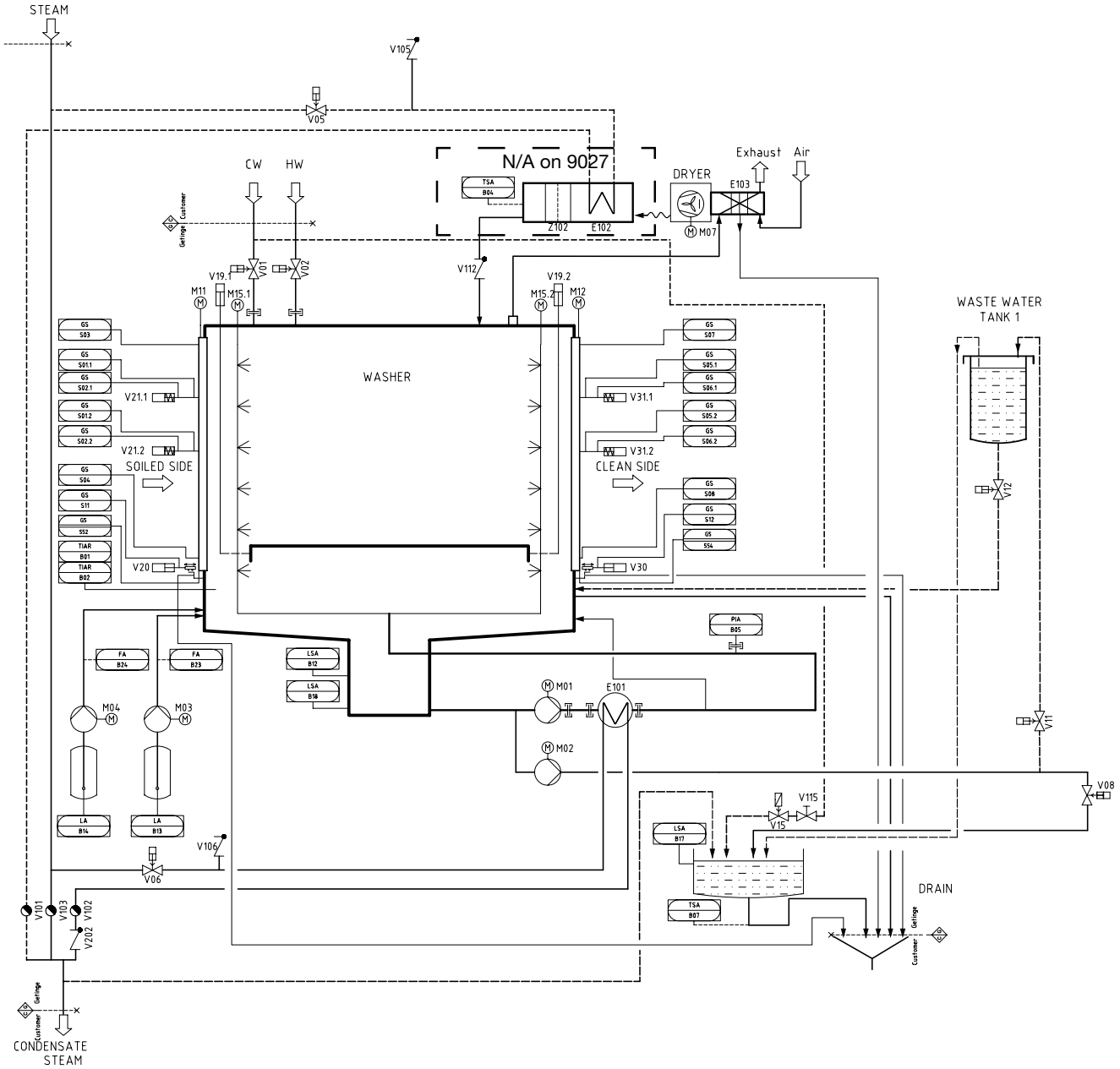
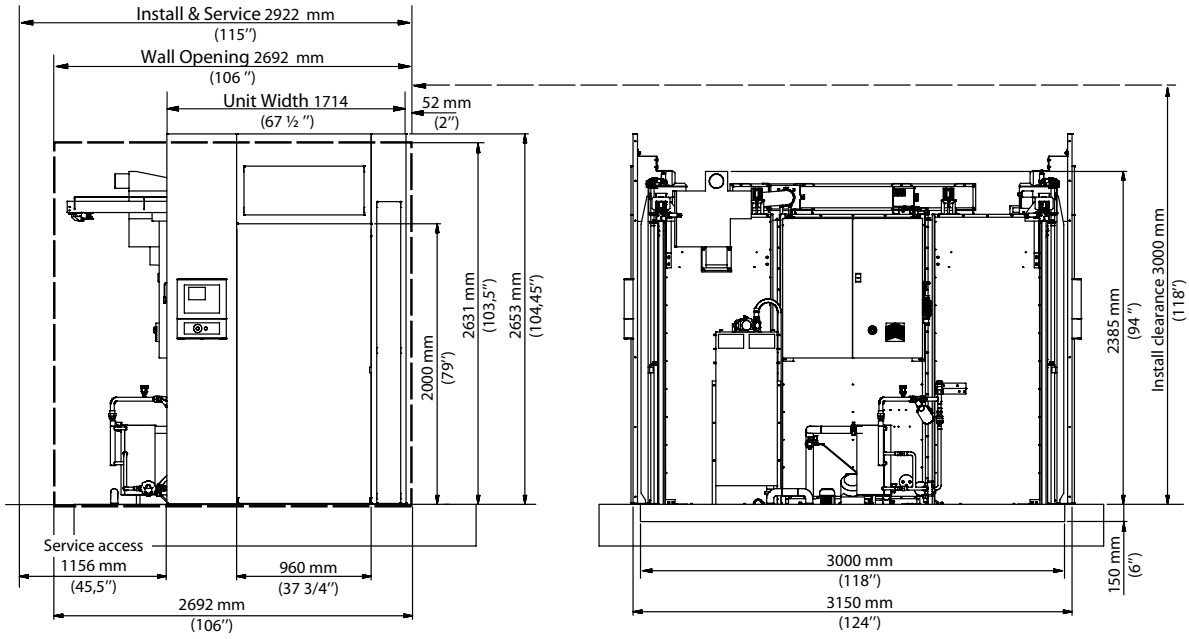
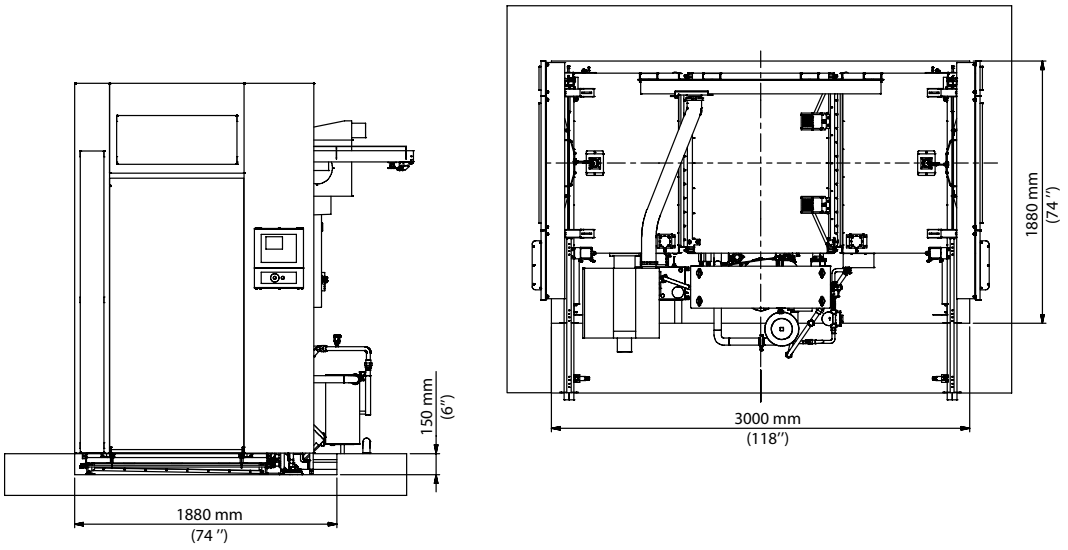


SCHEMATIC DIAGRAM
9027



ROUGH-IN DRAWING PIT MOUNTED

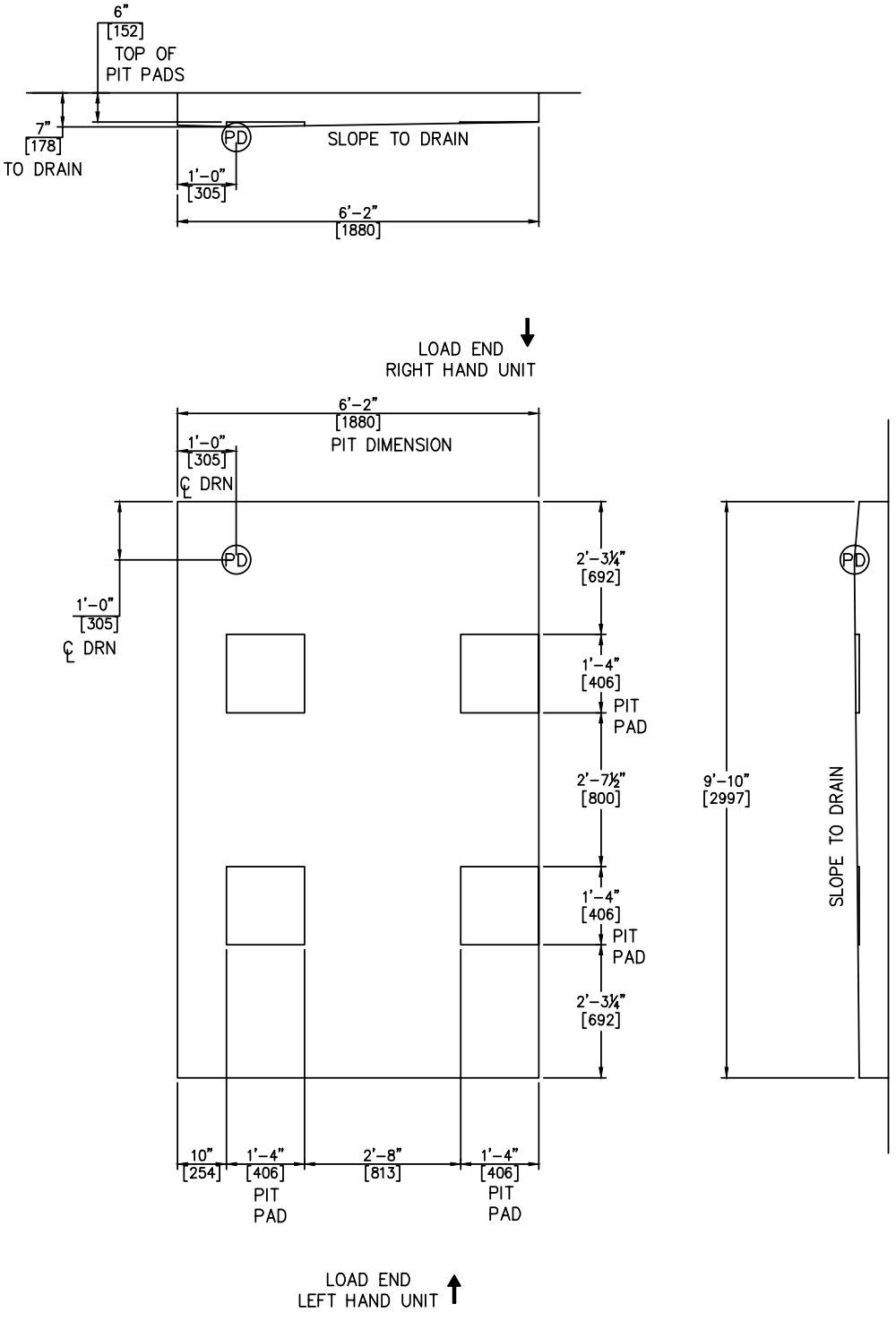




This drawing applies to the minimum required pit messurements.
Only applicable with inclining door option.
For new installations of the machine see recomended pit dimensions om pages 9-10.

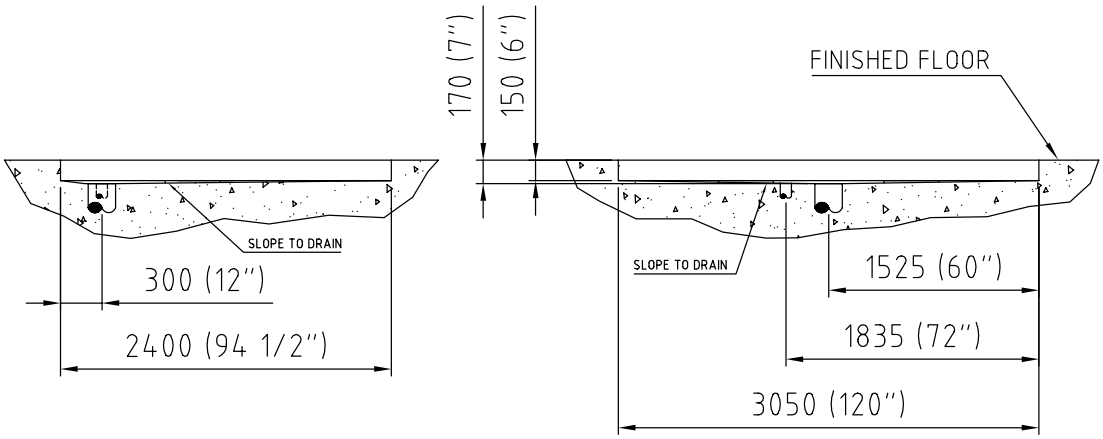
9027 OPTIONAL PIT DETAIL FOR INCLINED DOOR MODELS

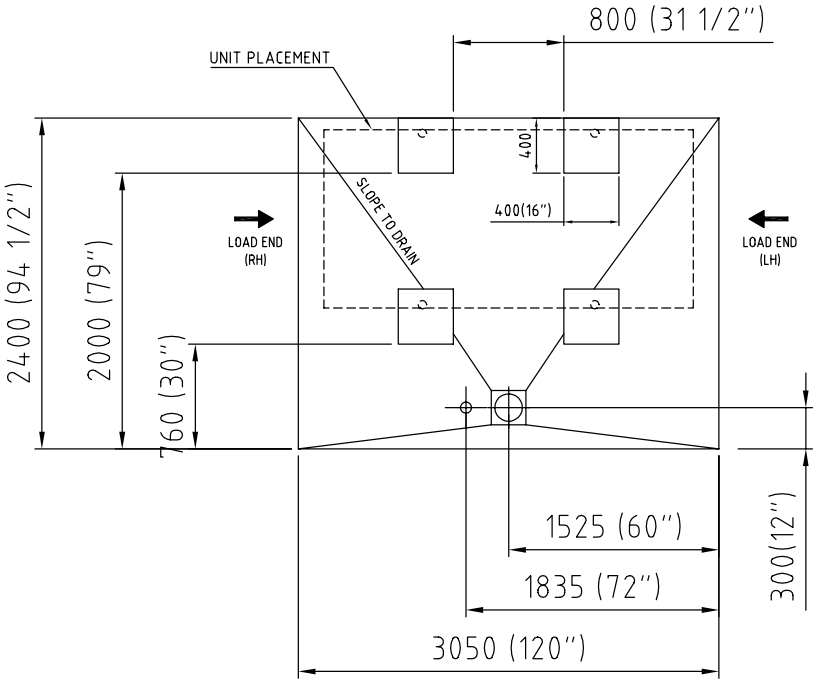
Detail for left and right hand units



ROUGH-IN DRAWING: FOR LEVEL DOOR MODELS

Detail for left and right hand units





NOTE! Measures in (mm) are correct.Those in inches are approximate.

LH = Left Hand

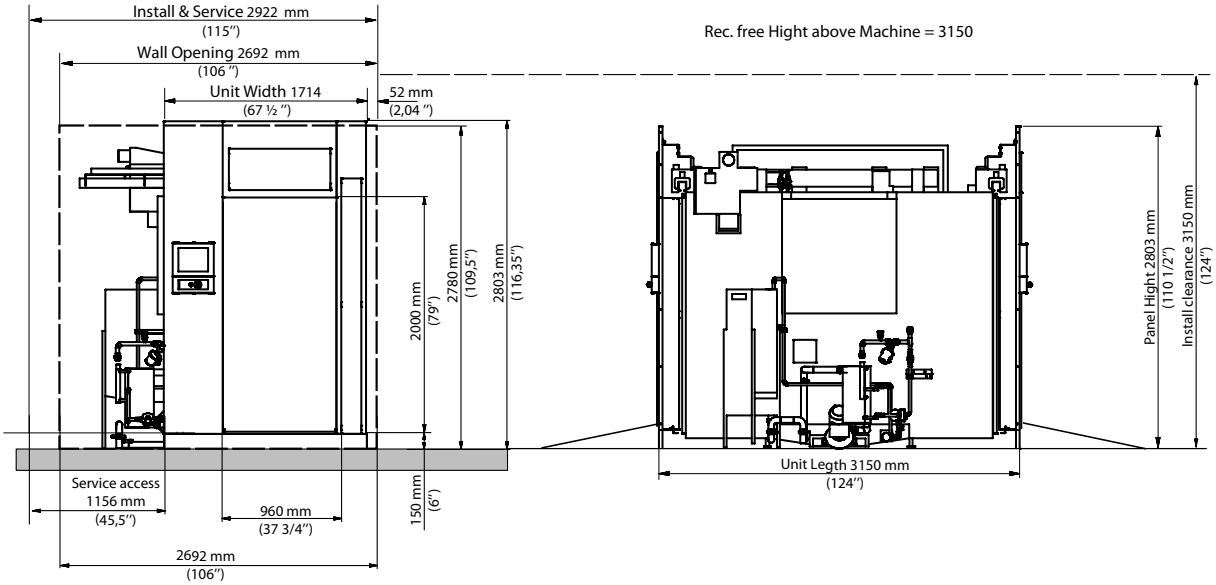
RH = Right Hand

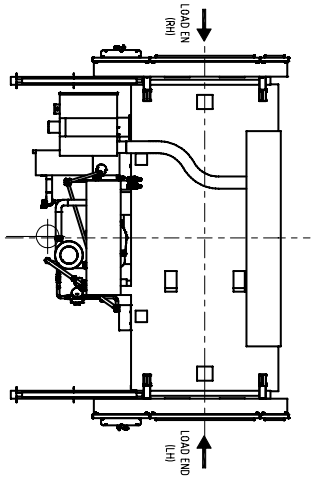
GETINGE 9027 WASHER DISINFECTOR

PIT MOUNTED

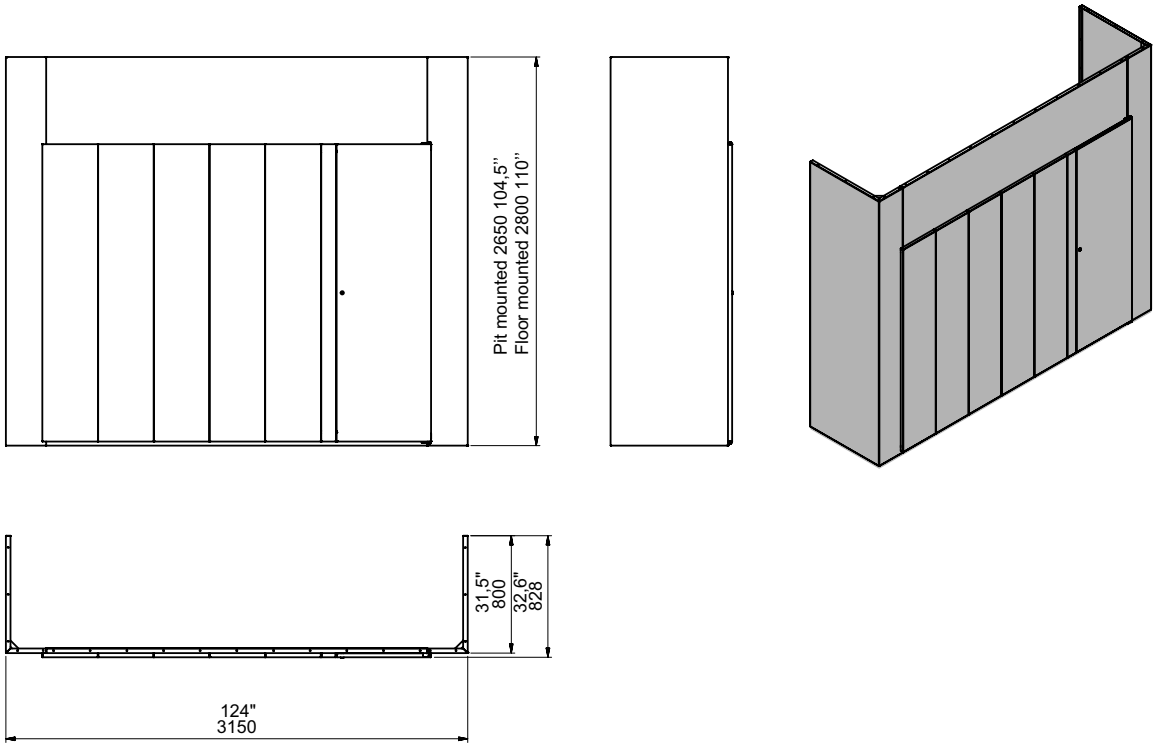
PIT DETAIL FOR LEFT AND RIGHT HAND UNITS

ROUGH-IN DRAWING: DOUBLE DOORS LEFT AND RIGHT HAND FLOOR MOUNTED UNIT

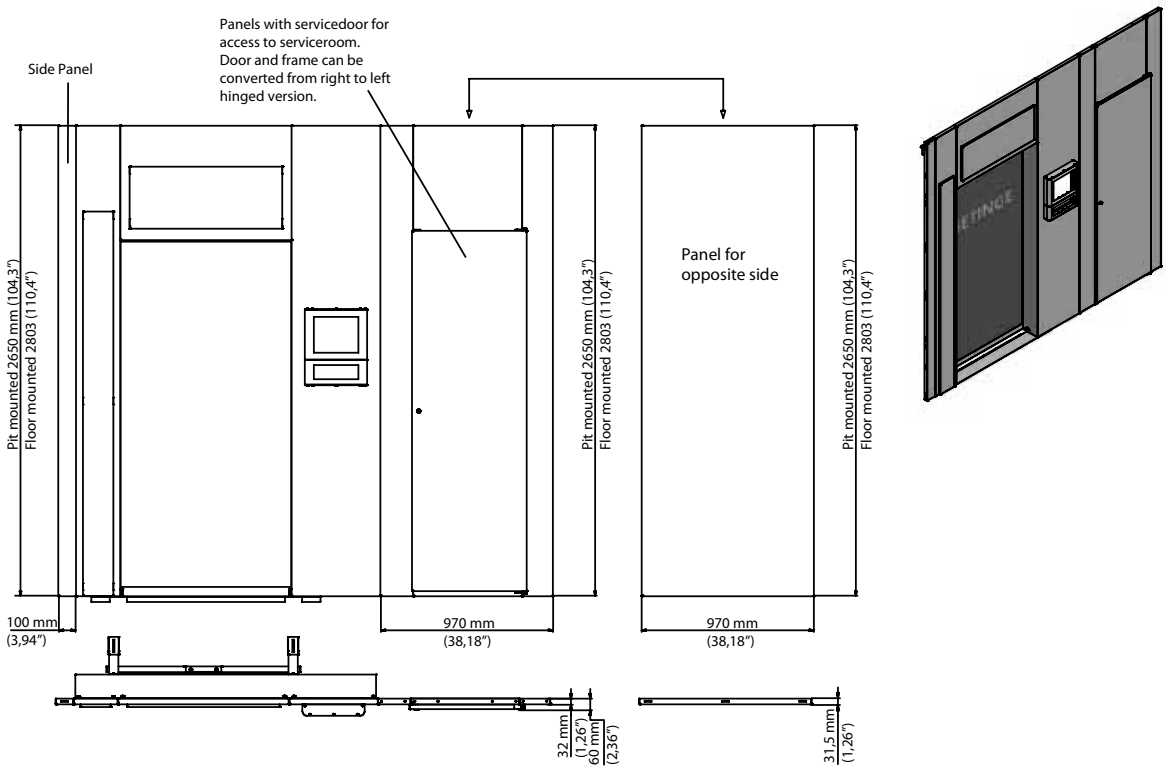




ROUGH-IN DRAWING: SIDE ACCESS SERVICE ENCLOSURE



ROUGH-IN DRAWING: FRONT ACCESS SERVICE DOOR WITH PANEL ON OPPOSITE SIDE



UTILITY REQUIREMENTS				
Utility	**Unit connection**	**Design Pressure**	**Flow requirements**	**Comments**
CW = Cold water See note 1, 2 and 3	Tri-Clamp ø25 pipe ø18x1 Tri-Clamp 3/4” (Alternative male 3/4” or 1/2”)	2-8 BAR (30-120 psi)	Min 100 l/min (26 GPM) Temp. 5-20°C (41-68°F)	Alt. connection thread 3/4” Temp. 5-20°C (see chapter water quality)
HW = Hot water See note 1, 2 and 3	Tri-Clamp ø25 pipe ø18x1 Tri-Clamp 3/4” (Alternative male 3/4” or 1/2”)	2-8 BAR (30-120 psi)	Min 100 l/min (26 GPM) Temp. 5-20°C (41-68°F)	Alt. connection thread 3/4” Temp. 45-60°C (see chapter water quality)
HQW = High Quality Water (option) See note 1, 2 and 3	Tri-Clamp ø25 pipe ø18x1 Tri-Clamp 3/4” (Alternative male 3/4” or 1/2”)	2-8 BAR (30-120 psi)	Min 100 l/min (26 GPM) Temp. 5-20°C (41-68°F)	Alt. connection thread 3/4” Temp. 5-90°C (see chapter water quality)
CA = Compressed air	Ø 6 mm 1/4” Thread	5-8 BAR (72-120 psi)	25 l/min (0,9 SCFM)	Air free from oil and water
G = Gully	N/A	N/A	Min 200 l/min Temp. Max 93°C	
D = Process drain (Tight) See note 4	Ø 50 mm (2”)	N/A	Min 200 l/min (50 GPM) Temp. Max 93°C (194°F)	Ø 80 (3”) floor drain Temp. max 60°C (140°F) with drain cooling
S = Steam	25 mm (1” thread)	2-4 BAR	300-400 kg/h (660-880 lb/hr)	Dynamic steam pressure
C = Steam condensate	3/4” thread	N/A		Connection point at floor level Back pressure not to exceed 0,3 bar (5 psi)
EX = Exhaust See note 5	Ø 100 mm (4”)	N/A	Normal vol >400m³/h (235 CFM) Forced vent during drying 600-1000m³/h (350-590 CFM)	Connection to building exhaust with air gap 50 mm (2”). See note 5
E = Electrical See note 6 and 7				See chapter Electrical connection and CD Electrical diagrams

ENVIRONMENTAL REQUIREMENTS	
Temperature service area	5-30°C (41-86°F)
Relative humidity service area	Max 80% at 30°C
Main supply voltage fluctuations	Not to exceed ±10% of nominal voltage
Altitude above sea level	Standard if <1000 m above sea level. Special if >1000m A_0 Control and reduced setpoint of disinfection temp. Diff pressure elimination in glass doors

OPERATING CONDITIONS	
Surface temp SS and CS	<50°C (122°F)
Humidity (exhaust)	Humidity dropping to less than 60% after approx 5 min drying
Sound level, See note 8	Approx 65 db (A)
Radiant heat loss	Clean side 2,25 KW Soiled side 0,90 KW Service area 5-10 KW
Power consumption	Steam heated Max 6 KW
Air exhaust during drying	400 m³/h (235 CFM)

Steam heated			
200 V, 3+PE, 50/60 Hz	C20	15,5 A	7,3 A
208 V, 3+PE, 50/60 Hz	C20	15,2 A	7,3 A
220 V, 3+PE, 50/60 Hz	C20	14,7 A	7,3 A
230 V, 3+PE, 50/60 Hz	C20	14,3 A	7,3 A
240 V, 3+PE, 50/60 Hz	C20	14,0 A	7,3 A
380 V, 3+PE, 50/60 Hz	C16	8,5 A	7,3 A
400 V, 3N+PE, 50/60 Hz	C16	7,3 A	7,3 A
415 V, 3N+PE, 50/60 Hz	C16	7,1 A	7,3 A
480 V, 3+PE, 50/60 Hz	C10	6,9 A	7,3 A
600 V, 3+PE, 50/60 Hz	C10	5,0 A	7,3 A

WEIGHTS AND DIMENSIONS			
Outer Dimensions			
Dimensions	Width: 1714 mm (67 1/2" inch)	Hight: 2653 mm (104,5 inch)	Length: 3150 mm (124 inch)
Effective Chamber dimensions			
Dimensions	Width: 960 mm (38 inch)	Hight: 2000 mm (79 inch)	Length: 2680 mm (106 inch)
Volume			
Recommended clearance measures, i.e. the area require to install and service the unit			
Dimensions	Width: 2922 mm (115 inch)	Hight*: 3000 mm (118 inch)	Length**: 3150 mm (124 inch)
Core Module			
Dimensions	Width: 1350 mm (53 inch)	Hight*: 2440 mm (96 inch)	Length**: 1173 mm (46 inch)
Weight	250 kg (551 LB)		
Chamber Extension Module			
Dimensions	Width: 1315 mm (52 inch)	Hight*: 2445 mm (96 inch)	Length**: 755 mm (29 inch)
Weight	150 kg (330 LB)		
Glass Door			
Dimensions	Width: 1095 mm (43 inch)	Hight*: 2100 mm (83 inch)	Depth**: 35 mm (1,5 inch)
Weight	100 kg (220 LB)		
Total Weight			
Dimensions	1500 kg (3300 LB)		
Shipping crate (2X)			
Dimensions	Width: 2200 mm (87 inch)	Hight*: 2850 mm (112 inch)	Length**: 2150 mm (85 inch)
Weight	9027: 1125 kg (2480 LB)		

Notes:

1) It shall be customers responsibility to insure by use of pressure regulators or other means that maximum specified pressures are not exceeded.
2) It shall be the customers responsibility to eliminate water or steam hammer conditions should they occur in the service piping.
3) Is shall be the customers responsibility to ensure that water supplies are properly protected for internal cross connection control in accordance with local building and plumbing requirements.
4) It shall be the customers responsibility to provide a properly sized and located drainage system in accordance with the national pluming code. Consider what other equipment is tied to drain to eliminate slow drainage or backup. If site, conditions dictate that the washer will dump water directly to pit, the pit should be water-proofed.
5) It is the costumers responsibility to provide a service area venting system with requirements.

   Alt.1) A system with draught of 600-1000 m^3/h (350-590 CFM) all the time.

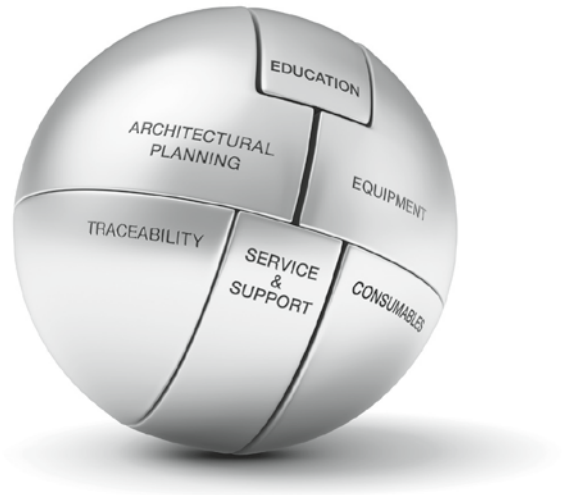
   Alt.2) A system with a base draught of 200-400 m^3/h (118-235 CFM) and a controlled forced draught during drying ((600-1000 m^3/h) (350-590 CFM)) (when forced ventilation required signal activated.)

   Note: It is important that the maximum temperature of the service area never exceeds +30°C (in order to maintain normal estimated lifetime of components in the electrical cabinet).

   The system should be a dedicated, corrosion proof & water tight vent. slope vent back to washer.
6) It shall be the customers responsibility to complete all electrical connections using properly sized wiring in accordance with the national electrical code.
7) Is shall be the customers responsibility to provide a fused disconnect switch in all electrical supply lines at the washer location.
8) Sound level value is valid when washer and service area are build in. Measured 1 meter in front of the washer and 1.5 meter above floor level.

*) Measure refers to unit standing on the floor. For unit installed in a pit deduct 150 mm.

**) Measure refers to double door installation.



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HC_WSDS_PS_9027_1110_EN_US PS07-0021 9027 Product Specification